

Applicants : Robert L. Bingle, Joseph Camilleri, Peter J. Whitehead and Kenneth Schofield
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Remarks:

The amendments and remarks presented herein are believed to be fully responsive to the Office Action dated February 2, 2010, the period for response being extended via the attached petition and fee for a one month extension of time. This response is being filed with a Request for Continued Examination.

Claims 1, 5-9, 12, 15, 16, 34-37, 40, 41, 48, 49 and 66-80 are pending in the application. Claims 2-4, 10, 11, 13, 14, 17-33, 38, 39, 42-47 and 50-65 have been canceled without prejudice and claims 1, 5, 34-36 and 48 have been amended and new claims 66-80 have been added as set forth above. The amendments and new claims are fully supported in the specification and drawings as originally filed. No new matter has been added.

ALLOWED CLAIMS

Claims 16 and 49 are allowed. Applicants have amended claims 34, 35, 36 and 48 to be dependent on allowed independent claim 49 so that claims 34-37, 40, 41 and 48 should also be allowed.

CLAIM REJECTIONS

Claims 1 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pastrick et al., U.S. Pat. No. 6,276,821, in view of Bos, U.S. Patent No. 6,201,642. Claims 6-8, 31, 35, 47 and 48 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pastrick et al., in view of Bos, and further in view of Kallhammer et al., U.S. Pat. Publication No. 2008/0043105, while claims 9 and 36-41 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pastrick et al., in view of Bos and Kallhammer et al., and in further view of Strumolo et al., U.S. Pat. No. 6,535,242, and claims 12 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pastrick et al., in view of Bos and further in view of Strumolo et al., and claim 34 was rejected under 35 U.S.C. §103(a) as being unpatentable over Pastrick et al., in view of Bos and Kallhammer et al., and further in view of Schofield et al., U.S. Pat. No. 6,690,268.

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Applicants respectfully traverse the rejections under 35 U.S.C. §103. However, and without acquiescing in the rejections in any manner and solely to expedite prosecution and allowance of the claims, Applicants have clarified independent claim 1 and submit that the present claims are in condition for allowance for at least the reasons set forth below.

Applicants have amended independent claim 1 to clarify that the camera module is configured for mounting at a vehicle, and the plastic housing includes a connector portion and a camera portion, with the connector portion and the camera portion being laser welded together to form a substantially hermetic seal. The camera module comprises a self-contained camera module with the imaging sensor and associated components substantially sealed to limit or substantially preclude water intrusion into the plastic housing. The connector portion of camera module comprises an electrical connector that is suitable for electrically conductive connection to a vehicle electrical connector when the camera module is positioned at the vehicle. The imaging sensor is disposed at a first substrate and the electrical connector is disposed at a second substrate, with the electrical connector electrically conductively connected to circuitry of the imaging sensor at the first substrate via a flexible connector. The first substrate is attached at the camera portion and the second substrate is attached at the connector portion such that the first and second substrates are disposed within the plastic housing with the imaging sensor having a field of view through a portion of the camera portion. The electrical connector extends from the second substrate through the connector portion so as to be accessible at an end of the connector portion for connecting to the vehicle electrical connector when the camera module is positioned at the vehicle.

With respect to the rejection of independent claim 1, Applicants submit that Pastrick et al. does not disclose, suggest or anticipate or render obvious the presently claimed invention. Pastrick et al. discloses an exterior mirror with a signal light module. There is no disclosure or suggestion in Pastrick et al. of a camera module, particularly a camera module as claimed herein, which comprises a plastic housing and an imaging sensor having a lens and a pixelated imaging array, and which comprises a self-contained camera module with the connector portion and camera portion being laser welded together to form a substantially hermetic seal, and with the

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self-contained camera module configured to be positioned at the vehicle as a unit, and comprising an electrical connector that is suitable for electrically conductive connection to a vehicle electrical connector when the camera module is positioned at the vehicle, and wherein the imaging sensor is disposed at a first substrate and the electrical connector is disposed at a second substrate, and wherein the electrical connector is electrically conductively connected to circuitry of the imaging sensor at the first substrate via a flexible connector, and wherein the first substrate is attached at the camera portion and the second substrate is attached at the connector portion such that the first and second substrates are disposed within the plastic housing with the imaging sensor having a field of view through a portion of the camera portion, and wherein a control is operable to process video images captured by the imaging sensor of the camera module, as is claimed in independent claim 1.

To the contrary, Pastrick et al. discloses an exterior mirror with a signal light module. Pastrick et al. discloses that the signal light module may include one or more cameras. However, there is no disclosure or suggestion in Pastrick et al. of a camera module as claimed herein. Nor is there any disclosure or suggestion in Pastrick et al. of laser welding a camera portion and a connector portion of a camera module together to form a substantially hermetic seal. To the contrary, Pastrick et al. discloses a signal light module. Although Pastrick et al. mentions that the *signal light* module may have upper and lower portions sonic welded or heat staked together, and that the signal light module "may include incorporated therein one or more cameras" (see column 29, lines 62-63 of Pastrick et al.), there is no disclosure or suggestion in Pastrick et al. of a *camera module* having camera portion and a connector portion *laser welded* together to form a substantially hermetic seal, as claimed in independent claim 1. Bos is cited for its alleged disclosure of a self-contained camera and pixelated imaging array, but falls well short of disclosing or suggesting the elements of the claimed imaging system that are missing from Pastrick et al.

The presently claimed invention of independent claim 1 encompasses a self-contained camera module that is positioned at the vehicle as a unit and that has an imaging sensor having a lens and a pixelated imaging array disposed at a first substrate of a camera

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portion of the module and an electrical connector suitable for connecting to a power source or control of the vehicle disposed at a second substrate of a connector portion of the module, with circuitry on both substrates being electrically connected via a flexible connector, and with mating portions of the plastic housing being laser welded together to form a substantially hermetic seal. Such a self-contained laser welded camera module clearly is not disclosed or suggested in Pastrick et al., nor Bos nor any of the other prior art references applied herein.

Thus, Applicants submit that Pastrick et al., either alone or in combination with Bos and/or any other applied art, does not disclose, suggest or render obvious the imaging system of the present invention, particularly as set forth in independent claim 1. With respect to the rejection of dependent claims 5-9, 12 and 15, Applicants submit that Pastrick et al., either alone or in combination with Bos and/or Kallhammer et al. and/or Strumolo et al., does not disclose, suggest or anticipate or render obvious the imaging system of the present invention, particularly as set forth in these claims, for at least the reasons set forth above. Reconsideration and withdrawal of the rejection of claims 1, 5-9, 12 and 15 is respectfully requested.

Accordingly, Applicants respectfully submit that Pastrick et al., either alone or in combination with Bos and/or with any other prior art of record, does not disclose, teach, suggest, anticipate or render obvious the imaging system of the present invention, particularly as set forth in independent claim 1 and in the claims depending therefrom. Thus, Applicants respectfully submit that Pastrick et al., either alone or in combination with any other prior art reference of record, does not disclose or suggest or render obvious to one of ordinary skill in the art the combination of features that collectively and combined together constitute the claimed subject matter of the imaging systems as set forth in claims 1, 5-9, 12, 15, 34-37, 40, 41, 47 and 48. Reconsideration and withdrawal of the rejections of claims 1, 5-9, 12, 15, 34-37, 40, 41, 47 and 48 is respectfully requested. Applicants also submit that new claims 66-80 are also in condition for allowance.

Claims 1, 5-9, 12, 15, 16, 34-37, 40, 41, 48, 49 and 66-80 are pending in the application. Applicants respectfully submit that claims 1, 5-9, 12, 15, 16, 34-37, 40, 41, 48, 49

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and 66-80 are in condition for allowance and a notice to that effect is earnestly and respectfully requested.

Respectfully submitted,

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